

XV. *The Hymenoptera of Fiji.* By ROWLAND E. TURNER,
F.Z.S., F.E.S.

[Read November 20th, 1918.]

ONLY fifty-three Hymenoptera seem so far to have been recorded from Fiji, including five new species described here. Of these several are undoubtedly introduced species, and others are known to have a wide range in Polynesia. A few of the larger species are almost certainly confined to Fiji, and show no near relationship to species found in any other group of islands. Thus *Cyphononyx vitiensis*, Turn., is very distinct from any of the *Psammocharidae* inhabiting New Caledonia or New Zealand; and *Stizus inermis*, Handl., is very distinct in the structure of the male antennae from the wide-ranging section of the genus to which it approaches most nearly in other respects. Though doubtless the fauna of the group is very poor in the larger Hymenoptera, there must be many of the more minute species still remaining to be discovered, and it is important that the fauna should be studied before it becomes too much changed by the ravages of cultivation and the competition of imported forms.

Most of the material used for this paper was collected by Mr. R. Veitch and forwarded to the Imperial Bureau of Entomology.

Family FORMICIDAE.

Subfamily PONERINAE.

1. *Odontomachus angulatus*, Mayr.

Odontomachus angulatus, Mayr, Sitzungsber. Akad. Wiss.
Wien, liii, p. 500, 1866.

Hab. Ovalau.

2. *Odontomachus haematoda*, Linn.

Formica haematoda, Linn., Syst. nat. Ed. 10, i. p. 582,
1758.

Odontomachus haematodes, Latr., Hist. nat. Crust. et Insect,
xiii, p. 257, 1805.

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Hab. Natova (R. Veitch), August: Nairai (*Voyage of the Herald*), November 1855. Also from almost all tropical regions.

Subfamily *MYRMECINAE.*

3. *Cardiocondyla nuda*, Mayr.

Leptothorax nudus, Mayr, Sitzungsber. Akad. Wiss. Wien, liii, p. 508, 1866.

Cardiocondyla nuda, Forel, Mitth. München. Entom. Ver., v, 1, p. 3, 1881.

A wide-ranging species in the Oriental and Australian regions.

4. *Pheidole oceanica*, Mayr.

Pheidole oceanica, Mayr, Sitzungsber. Akad. Wiss. Wien, liii, p. 510, 1866, ♀♂ (*nec* ♀, *nec* ♂).

Hab. Ovalau. Also from Tonga.

5. *Pheidole umbonata*, Mayr.

Pheidole oceanica, Mayr, Sitzungsber. Akad. Wiss. Wien, liii, p. 510, 1866, ♀♂ (*nec* ♀ *nec* ♂).

Pheidole umbonata, Mayr, Verh. Zool.-bot. Ges. Wien, xx, p. 977, 1870, ♀.

Hab. Ovalau. Also from Tonga.

Subfamily *CAMPONOTINAE.*

6. *Camponotus cristatus*, Mayr.

Camponotus cristatus, Mayr, Sitzungsber. Akad. Wiss. Wien, liii, p. 489, 1866.

Hab. Ovalau.

7. *Camponotus laminatus*, Mayr.

Camponotus laminatus, Mayr, Sitzungsber. Akad. Wiss. Wien, liii, p. 489, 1866.

Hab. Ovalau.

8. *Camponotus schmeltzii*, Mayr.

Camponotus schmeltzii, Mayr, Sitzungsber. Akad. Wiss. Wien, liii, p. 490, 1866.

Hab. Ovalau.

9. *Camponotus (Colobopsis) dentatus*, Mayr.

Colobopsis dentata, Mayr, Sitzungsber. Akad. Wiss. Wien, liii, p. 492, 1866.

Hab. Ovalau.

10. *Camponotus (Colobopsis) carinatus*, Mayr.

Colobopsis carinata, Mayr, Verh. Zool.-bot. Ges. Wien, xx, p. 943, 1870.

Hab. Ovalau.

11. *Camponotus (Colobopsis) oceanicus*, Mayr.

Colobopsis oceanica, Mayr, Verh. Zool.-bot. Ges. Wien, xx, p. 943, 1870.

Hab. Ovalau.

Family APIDAE.

Subfamily PROSOPIDINAE.

12. *Prosopis fijiensis*, Ckll.

Prosopis fijiensis, Ckll., Ann. & Mag. Nat. Hist. (8) iv, p. 393, 1909, ♀.

I think this species should be placed in the genus *Palaeorhiza*, Pkns., but, as I have only seen the female, I leave it provisionally in *Prosopis*.

Subfamily ANDRENINAE.

13. *Halictus perpessicus*, Kohl.

Halictus perpessicus, Kohl, Denkschr. Akad. Wiss. Wien, lxxxii, p. 307, 1908, ♀♂.

Hab. Cuvu (*R. Veitch*), June. Described from Samoa, but also recorded from Fiji by Kohl.

Subfamily MEGACHILINAE.

14. *Lithurgus albofimbriatus*, Sichel.

Lithurgus albofimbriatus, Sichel, Reise d. Novara Zool. ii, Hymen., p. 154, 1867, ♀.

Hab. Cuvu (*R. Veitch*), July and August. Also from Tahiti.

This species has recently become established in Hawaii.

15. *Megachile scutellata*, Sm.

Megachile scutellata. Sm., Deser. New Spec. Hymen.,
p. 66, 1879. ♀.

Hab. Cuvu (*R. Veitch*), June.

16. *Megachile fimbriventris*, Friese.

Megachile fimbriventris. Friese, Deutsche Ent. Zeitschr.,
p. 453, 1911.

Hab. Cuvu (*R. Veitch*), June.

This seems to me to be a subspecies of *M. similis*, Sm., from the New Hebrides, differing in the distinctly stronger puncturation of the tergites.

Family SPHEGIDAE.

Subfamily STIZINAE.

17. *Stizus inermis*, Handl.

Stizus inermis. Handl., Sitzungsab., Akad. Wiss. Wien, ci,
p. 91, 1892. ♂.

Stizus pacificus. Turn., Trans. Ent. Soc. London, p. 82,
1917, ♀.

The male varies very much in colour, the abdomen in some specimens being almost entirely pale yellow, also the greater part of the median segment and postscutellum, the greater part of the scutellum laterally, the sides of the mesonotum and two longitudinal bands near the middle of the mesonotum. The colour of the female does not seem to vary as much.

Hab. Cuvu (*R. Veitch*), January. ♂♀; Natova, October, ♀.

Though near the *tridens* group, this species is very distinct in the simple antennae of the male, as pointed out by Handlirsch.

Subfamily CRABRONINAE.

18. *Rhopalum oceanicum*, Schulz.

Crabro (Rhopalum) oceanicum. Schulz, Spolia Hymenopt.,
p. 202, 1906.

19. *Crabro veitchi*, Turn.

Crabro veitchi, Turn., Trans. Ent. Soc. London, p. 84,
1917, ♀.

Subfamily *LARRINAE*.20. *Notogonia retiaria*, Turn.

Notogonia retiaria, Turn., Proc. Zool. Soc. London, p. 479, 1908.

Hab. Natova (*R. Veitch*), April; Cuvu, January. Also from Australia.

Subfamily *TRYPOXYLONINAE*.21. *Pison ignavum*, Turn.

Pison ignavum, Turn., Proc. Zool. Soc. London, p. 511, 1908.

Hab. Rarawai (*R. Veitch*), November. Also from Queensland.

22. *Pison tahitense*, Sauss.

Pison tahitense, Sauss., Reise d. Novara Zool., ii. Hymen., p. 65, 1867.

Hab. Natova (*R. Veitch*), October.

Described from Tahiti, also recorded by Kohl from Samoa.

23. *Pison rechingeri*, Kohl.

Pison rechingeri, Kohl, Denkschr. Akad. Wiss. Wien, lxxxi, p. 309, 1908.

Hab. Fiji (*R. C. L. Perkins*).

Described from Samoa.

Family *EUMENIDAE*.24. *Eumenes ovalauensis*, Sauss.

Eumenes ovalauensis, Sauss., Stett. Entom. Zeit., xxx, p. 53, 1869.

Belenogaster bidentatus, W. F. Kirby, Ann. & Mag. Nat. Hist. (5) xiii, p. 410, 1884, ♂.

Hab. Suva (*Woodford*); Sigatoka (*R. Veitch*), May.

25. *Rhynchium rufipes*, Fabr.

Vespa rufipes, Fabr., Syst. Ent., p. 367, 1775.

Rhynchium rufipes, Sauss., Reise d. Novara, Zool. ii. p. 8, 1867.

Hab. Cuvu (*R. Veitch*), September; Sigatoka, May. Also from Rarotonga Tahiti and other Pacific Islands.

26. *Odynerus (Leionotus) mediocinctus*, sp. n.

♀. Nigra; mandibulis, clypeo, macula inter antennis, scapo, flagelli articulo primo, prothorace, mesopleuris macula magna sub alis, tegulis, scutello fascia lata transversa, segmento mediano macula apicali utrinque, segmentis abdominalibus primo, quinto sextoque, pedibusque rufo-aurantiacis; alis infumatis, venis fuscis.

Long. 9 mm.

♀. Clypeus rather sparsely punctured, much longer than its greatest breadth, rather narrowly subtruncate at the apex; a short longitudinal carina between the antennae. Front strongly, vertex more finely punctured; thorax sparsely, but rather strongly, punctured, more finely on the pleurae than on the dorsal surface, somewhat elongate; scutellum and postscutellum almost flat; the postscutellum subtriangular, narrowly rounded at the apex. Median segment prolonged horizontally at the sides, the middle strongly convex from the apex of the postscutellum. Abdomen shining, with a few scattered punctures; first tergite scarcely more than half as broad at the apex as the apex of the second, the second somewhat constricted at the base, longer than its greatest breadth; second sternite rather sparsely punctured, almost flat. Second abscissa of the radius very short, the second cubital cell almost triangular.

Hab. Fiji (*R. Veitch*). 1 ♀.

It is possible that the colour of the markings has been altered by cyanide and should be yellow, as in the allied species, *O. bizonatus*, Sauss., and *O. quodi*, Vach., to which it is closely allied in structure and sculpture, though differing much in the distribution of the colour on the abdomen.

27. *Alastor (Paralastor?) graeffei*, Sauss.

Alastor graeffei, Sauss., Stett. Entom. Zeit., xxx, p. 55, 1869.

Hab. Ovalau.

Family VESPIDAE.

28. *Polistes macaensis*, Fabr.

Vespa macaensis, Fabr., Entom. Syst. ii, p. 259, 1793.

Polistes macaensis, Fabr., Syst. Piez., p. 272, 1801.

This species has been imported into Fiji, and into many other Pacific Islands.

Family SCOLIIDAE.

Subfamily SCOLIINAE.

29. *Scolia ovalauensis*, Sauss.

Discolia ovalauensis, Sauss., Stett. Entom. Zeit., xxx, p. 62, 1869. ♀♂.

Hab. Ovalau (*Saussure*); Suva (*Woodford*); Cuvu (*R. Veitch*), June to August.

Family PSAMMOCHARIDAE.

30. *Cyphononyx vitiensis*, Turn.

Cyphononyx vitiensis, Turn., Trans. Ent. Soc. London, p. 78, 1917, ♀♂.

Hab. Rarawai (*R. Veitch*), October to January; Natova (*R. Veitch*), October; Cuvu, (*R. Veitch*), May.

31. *Psammochares elatus*, Sm.

Pompilus elatus, Sm., Journ. Proc. Linn. Soc. Zool., viii, p. 82, 1862.

Pompilus inquirendus, Vachal, Revue d'Entomologie, xxiv, p. 117, 1907.

Hab. Cuvu (*R. Veitch*), January. Also from Vavau, New Caledonia, N. Queensland and Morty.

Typical *elatus* from Morty has the third abscissa of the radius nearly half as long as the second, whereas in *inquirendus*, which occurs in the other localities mentioned, the third cubital cell is pointed on the radius.

Family DRYINIDAE.

32. *Haplogonatopus vitiensis*, Pkns.

Haplogonatopus vitiensis, Pkns., Exp. Stat. Hawaiian Sug. Pl. Ass. Entom. Bull., i, p. 488, 1906.

33. *Pseudogonatopus melanaerias*, Pkns.

Pseudogonatopus melanaerias, Pkns., Exp. Stat. Hawaiian Sug. Pl. Ass. Entom. Bull., i, p. 487, 1906.

34. *Pseudogonatopus kiefferi*, Pkns.

Pseudogonatopus kiefferi, Pkns., Exp. Stat. Hawaiian Sug. Pl. Ass. Entom. Bull., i, p. 487, 1906.

35. **Gonatopus anomala**, Pkns.

Gonatopus anomala, Pkns., Exp. Stat. Hawaiian Sug. Pl. Ass. Entom. Bull. xi, p. 14, 1912.

36. **Neogonatopus vitiensis**, Pkns.

Neogonatopus vitiensis, Pkns., Exp. Stat. Hawaiian Sug. Pl. Ass. Entom. Bull., i, p. 490, 1906.

Family CHALCIDIDAE.

Subfamily ENCYRTINAE.

37. **Coenocyrtus pacificus**, Waterst.

Coenocyrtus pacificus, Waterst., Bull. Entom. Res., vi, p. 307, 1915.

Subfamily APHELINAE.

38. **Physcus fijiensis**, Howard.

Physcus fijiensis, Howard, Proc. Entom. Soc. Washington, xvi, p. 84, 1914.

Subfamily MYMARINAE.

39. **Polynema eucharis**, Pkns.

Polynema eucharis, Pkns., Exp. Stat. Hawaiian Sug. Pl. Ass. Entom. Bull., x, p. 25, 1912.

40. **Dicopus psyche**, Girault.

Dicopus psyche, Girault, Proc. Entom. Soc. Washington, xiv, p. 22, 1912.

Family EVANIIDAE.

Subfamily EVANININAE.

41. **Evania appendigaster**, Linn.

Ichneumon appendigaster, Linn., Syst. Nat. Ed. 10^a, i, p. 566, 1758.

Evania appendigaster, Fabr., Syst. Ent., p. 345, 1775.

Hab. Cuvu (*R. Veitch*), June.

This cosmopolitan species has been spread by ships to every part of the world.

42. *Evania impressa*, Schlett.

Evania impressa, Schlett., Ann. Naturh. Hofinns. Wien, iv, p. 153, 1889.

Hab. Natova (*R. Veitch*), January and June.

Also recorded from the Philippines, New Guinea, Palau and Tonga. There is also a female from Malekula, New Hebrides in the British Museum collection.

Subfamily FOENINAE.

43. *Hyptiogaster ex'ranea*, sp. n.

♂. Ferruginous; abdomine supra, femoribus tibiisque posticis supra, tarsis posticis flagelloque fuscis; tegulis pedibusque anticis intermediisque flavo-testaceis; alis hyalinis, iridescentibus, venis nigris.

Long. 7 mm.

♂. Very slender; head broader than the thorax, clypeus and face shining, closely microscopically punctured; front and vertex opaque, very finely granulate. Second joint of the flagellum three times as long as the first, equal to the combined length of the first and third joints. Neck rather short; prothorax rounded, without spines; mesonotum shorter than its apical breadth, rather strongly transversely striated, the parapsidal furrows deep and nearly reaching the posterior margin. Scutellum transversely striated, strongly depressed at the apex, with strong lateral and apical marginal carinae. Median segment convex, longer than broad, rugulose, with one or two distinct transverse striae in the middle. Petiole and the whole abdomen smooth and very slender, the dorsal surface almost black, tergites 2-5 luteous at the apex; petiole as long as the three following segments combined. Joints of the hind tarsi symmetrical, much longer than broad, the unguis small, hind tibiae thinly clothed with short upright hairs. Cubitus originating just below the middle of the basal nervure.

Hab. Cuvu (*R. Veitch*), June.

This is allied to the Australian species *H. darwini*, Westw., but is a more slender species and differs much in the sculpture of the mesonotum, in the symmetrical joints of the hind tarsi, and in the hairs on the hind tibiae. The female is unknown, but doubtless belongs to the group in which the terebra does not reach beyond the apex of the abdomen.

Family ICHNEUMONIDAE.

Subfamily PIMPLINAE.

44. *Lissopimpla semipunctata*, Kirby.

Rhyssa semipunctata, W. F. Kirby, Trans. Ent. Soc., London, p. 202, 1883.

Lissopimpla decemnotata, Kriechb., Entom. Nachr., xv, p. 310, 1889.

Lissopimpla haemorrhoidalis, Kriech., Entom. Nachr., xv, p. 310, 1889.

Lissopimpla semipunctata, Cam., Mem. Manchester Lit. & Phil. Soc., xlvi, 1902.

Krieger records this common Australian species from Fiji. It is doubtless an imported species.

45. *Lissopimpla veitchi*, sp. n.

♀. Fusco-ferruginea; facie, clypeo, pedibusque rufescentibus; abdomine mesonotoque obscure violaceo suffusis; antennis articulis 12-14 albidis; alis hyalinis, venis fuscis, stigmatе ochraceo.

♂. Feminae similis, antennis omnino fuscis, stigmatе, tibiis tarsisque fuscis, tibiis anticis infra ochraceis.

Long. ♀, 7 mm.; terebrae long. 3 mm.; ♂, 7 mm.

♀. Basal portion of the clypeus shining and almost smooth; the apical portion (clypeolus) finely and closely punctured, almost black. Eyes widely and shallowly emarginate on the inner margin, separated from the mandibles by a distance equal to about twice the breadth of the mandibles at their base. Face finely and irregularly punctured, with a broad median longitudinal carina; raised into a broadly V-shaped carina below the base of the antennae; the face shallowly concave on each side of the median carina. Front very shallowly concave from the anterior ocellus to the base of the antennae, smooth and shining. Thorax shining almost smooth, the mesonotum very minutely punctured, parapsidal furrows strongly developed; scutellum with distinct marginal carinae from the basal angles reaching to the middle of the lateral margins but not to the apex; postscutellum shining; pleurae smooth and shining, the longitudinal grooves on the mesopleurae less strongly developed than in *L. semipunctata*. Median segment with lateral and apical marginal carinae, and with two longitudinal carinae near the middle running from the base to the apical carina, the two median carinae more than twice as far from the lateral carinae as from each other; the dorsal surface of the segment rugulose, the apical slope oblique and almost smooth, the apical carina not

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produced into spines either at the apical angles or in the middle; the lateral carinae with a rather sharp angle in the middle. Abdomen smooth and shining; the first segment nearly twice as long as its apical breadth; second and third segments with a shallow groove on each side before the apex. Hind femora with a small tooth beneath nearly three-quarters from the base; hind tibiae almost smooth, the spines on the outer margin microscopic. Nervulus antefurcal; the mediella and cubitella forming a continuous line without an angle at their junction, the nervellus sharply bent just before its junction with the cubitella, the discoidella originating at the angle formed by the bend in the nervellus.

Hab. Natova, Fiji (*R. Veitch*), April, 1918.

In colour this resembles *L. concolor*, Krieg., from Timor, but differs in the absence of apical spines or lamellae on the median segment, also in sculpture and in the neurulation of the hind-wing; in the latter the mode of junction of the mediella and cubitella shows affinity with *Theronia*, but I consider that the form of the clypeus, the deep parapsidal furrows, the spine or tubercle on the hind femora and the antefurcal nervulus show conclusively that the species belongs to *Lissopimpla*. The radius of the fore-wing resembles that of *Theronia*, and is not sinuate beyond the areolet as in typical *Lissopimpla*.

46. *Echthromorpha immaculata*, Krieg.

Echthromorpha immaculata, Krieg., Mitt. Zool. Mus. Berlin, iv, p. 331, 1909.

Hab. Fiji.

Species of *Echthromorpha* are recorded from many of the Pacific Islands, but I have not seen *immaculata*.

47. *Echthromorpha diversor*, Morl.

Echthromorpha diversor, Morl., Revis. Ichneum., ii, p. 47, 1913.

Hab. Cuvu (*R. Veitch*), May to July; Nadi, October.

Subfamily OPHIONINAE.

48. *Henicospilus turneri*, Morl.

Henicospilus turneri, Morl., Revis. Ichneum., i, p. 51, 1912.

The single specimen sent by Mr. Veitch has the sculpture of the median segment much stronger than in typical Queensland specimens, the striae being strongly developed; it will probably constitute at least a subspecies.

49. **Henicospilus apicifumatus**, Morl.

Henicospilus apicifumatus, Morl., Entomologist, xviii, p. 139, 1915.

Hab. Nadi, Nadovi and Sigatoka (*R. Veitch*), March and September.

Apparently a common species.

50. **Paniscus opaculus**, Thoms.

Paniscus opaculus, Thoms., Opusc. Entom., p. 1199, 1888.

Hab. Nadi. Also from the whole Eastern hemisphere.

Apparently identical with Queensland specimens determined by Morley.

Subfamily *ICHNEUMONINAE*.

51. **Ichneumon (Euichneumon) promissorius**, Erichs.

Ichneumon promissorius, Erichs., Arch. f. Naturges. viii, 1. p. 256, 1811.

Probolus albocinctus, Cam., Entomologist, p. 181, 1906, ♀.

Probolus varilineatus, Cam., Proc. Linn. Soc. New South Wales, p. 191, 1912, ♂.

Hab. Natova (*R. Veitch*), April. Also from Tasmania and E. Australia as far north as Mackay.

I cannot find any specific distinction between Fijian and Australian specimens, and conclude that the species has been recently imported into Fiji.

Family *BRACONIDAE*.

Subfamily *CHELONINAE*.

52. **Chelonus vitiensis**, sp. n.

♂. Niger; mandibulis, scapo, tegulis, pedibusque, coxis inclusis, rufo-testaceis; tibiis posticis apice leviter infumatis, tarsis posticis fuscis; palpis pallidis; alis hyalinis, iridescentibus, stigmatibus venisque fuscis.

Long. 3 mm.

♂. Antennae 24-jointed; head transverse, distinctly narrowed behind the eyes, opaque and minutely punctured. Mesonotum closely punctured-rugulose, more coarsely posteriorly than anteriorly; scutellum finely punctured, with a strongly crenulate transverse basal groove; mesopleurae coarsely punctured. Postscutellum longitudinally striated. Median segment short, transverse, coarsely

reticulate, with a low carina from the base to the apex of the dorsal surface, the posterior angles produced and armed with a short spine; the surface of the posterior truncation finely punctured-rugulose. Abdomen about half as long again as the thorax, rather slender, at least four times as long as its basal breadth, not incised at the apex; the basal half coarsely longitudinally striated, with oblong reticulations; the third quarter finely punctured granulate, with fine longitudinal striae at the base; the apical quarter very closely and minutely punctured. Radial cell broad, a little shorter on the costa than the stigma, third abscissa of the radius straight.

Hab. Cuvu (R. Veitch), September.

The colouring is somewhat similar to that of *U. rufipes*, Szép., from New Guinea and E. Australia, but the antennae in that species are testaceous almost to the apex and the sculpture of the thorax is coarser, especially on the mesonotum, than in the present species; there is also an apical abdominal incision in *rufipes*.

Subfamily MICROGASTERINAE.

53. *Apanteles expulsus*, sp. n.

♀. Nigra; scapo, apice excepto, palpisque luteis; flagello basi subtus pedibusque flavo-testaceis, coxis nigris; trochanteribus posticis supra nigris; alis hyalinis, venis luteis; stigmatibus fusco-ferrugineo; terebra brevissima; segmento mediano areolato.

Long. 2mm.

♀. Antennae 18-jointed. Mesonotum and pleurae finely and closely punctured, subopaque; scutellum shining and almost smooth. Median segment short, not as long as the scutellum, with a smooth rhombic area in the middle from base to apex; the sides minutely punctured. First and second tergites finely rugose; the first tergite broad, the hind margin transverse, the second tergite about equal to the third in length; the third and following tergites smooth and shining. Hind coxae shining, minutely punctured; spurs of hind tibiae slender, not more than half as long as the metatarsus. Terebra exerted, very short. Cocoons pure white, not enclosed in a web.

Hab. Natova (R. Veitch), April.

Bred from the larva of a Noctuid moth (*Anticarsia irrorata* Fabr.). This is near the *Urogaster* section of the genus, but has the terebra shorter than usual, not reaching beyond the apical tergite.